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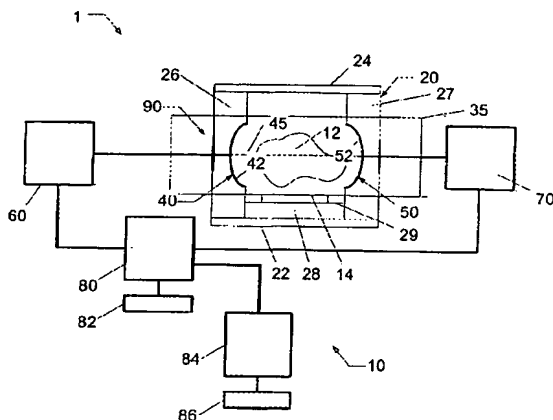
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(54) Title: METHOD AND SYSTEM FOR ELECTRON DENSITY MEASUREMENT



(57) Abstract: The present invention provides a diagnostic system for plasma processing, wherein the diagnostic system comprises a multi-modal resonator, a power source, a detector, and a controller. The controller is coupled to the power source and the detector and it is configured to provide a man-machine interface for performing several monitoring and controlling functions associated with the diagnostic system including: a Gunn diode voltage monitor, a Gunn diode current monitor, a varactor diode voltage monitor, a detector voltage monitor, a varactor voltage control, a varactor voltage sweep control, a resonance lock-on control, a graphical user control, and an electron density monitor. The diagnostic system can further provide a remote controller coupled to the controller and configured to provide a remote man-machine interface. The remote man-machine interface. The remote man-machine interface can provide a graphical user interface in order to permit remote control of the diagnostic system by an operator. In addition, the present invention provides several methods of controlling the diagnostic system in order to perform both monitor and control functions.

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